15 and the heat-transference block 19"; Specification, p. 8, lines 14-17); but there was no restriction, in either the specification or the drawings, that prevented the single element, the "heat transference means", from performing both functions.

Claim 11 has been amended to address the restriction imposed despite traverse; accordingly, the non-inclusion of Claims 11-23 should be reversed and these claims should be considered and examined, as they are encompassed within the elected invention.

OBJECTION TO THE SPECIFICATION

The specification was objected to on a first grounds "because the disclosed invention lacks patentable utility" and, more specifically, because "LENR in this system lacks credibility in view of the over all situation with regard to the production of cold fusion (LENR)". The Office's evaluation therein is based on materials dating no later than 2004 (DOE Report).

Respectfully, scientific research has progressed considerably since 2004. That was then; this is now – and the proof requested is no longer lacking.

Although it is not, in itself, legal or scientifically peer-reviewed evidence entirely dispositive of the DOE Report, Applicant respectfully requests that the Office take notice of the recent "60 Minutes" news story of April 19, 2009, which included the following specific assertion concerning "cold fusion" efforts: "At least 20 labs working independently have published reports of excess heat - heat up to 25 times greater than the electricity going in." See (http://www.cbsnews.com/stories/2009/04/17/60minutes/main4952167.shtml). Insofar as the Federal Circuit held in In Re Dash, Civ. App. 04-1145, 2004 WI 2829039, Fed. Cir. Dec. 10, 2004, unpublished, cert. denied, 126 S. Ct. 346 (2005) that non-peer-reviewed sources are usable in questions of operability, resource to this cannot be limited to one side only. Furthermore, unlike the situation in Dash, Applicant is not attempting to provide a method for attaining LENR; he is seeking to patent an application of LENR.

The reality (or lack thereof) will be, ultimately, determined in the real world and the PTO need not attempt to enforce an anti-Copernican ruling of prior, established, authority.

Applicant also respectfully requests that the Office take notice of U.S. Patent 7,442,287, issued Oct. 28, 2008, from Application 11/413,485, for "Material surface treatment method using concurrent electrical, vibrational and photonic stimulation". This patent was issued to the current Applicant, and specific attention is called to the following assertion therein: "SUMMARY DISCLOSURE [¶] The invention is a protocol that prepares the surface of a material, such as palladium, for an exothermic reaction. The protocol consists of a specific series of steps applying compounded and concurrent electrical, photonic, and vibratory stimuli between palladium electrodes immersed in a solution containing lithium sulfate as an electrolyte and anionic silica hydride as a surfactant while that solution is maintained at an elevated temperature at or near the boiling point. The solution is buffered to a pH in the range of 6.5 to 8.9. After preparation of the surface, a final step of the protocol calls for stimulation of the cathode with a DC voltage. [¶] The protocol shows evidence that the bonding of the palladium has changed at or near surface, for example, in that it will now stain with methylene blue. It also yields a sustained exothermic reaction at or near the boiling point of the solution."

Applicant is not required to provide, let alone prove, either a theoretical foundation or existence of general knowledge and acceptance of a concurrently unfolding scientific advance underlying his invention; he is only required to prove "patentable utility". Applicant asserts first, that the present (2009) state of the art removes the 2004 DOE Report's objections to LENR, and secondly, that the U.S. Patent Office should sensibly leave proof of operability to the real world. Neither the PTO nor its staff are required to certify that any invention is operable; and, according to the state of the art of 2009, the assertion adopted from the outdated DOE Report, that "the disclosed invention is presently considered to be inoperable", can no longer be sustained in light of subsequent scientific advances now known.

A second objection to the specification was made on the grounds of 35 USC §112, first paragraph, as "failing to provide an adequate written description" (emphasis in Office Action original). Specifically, the objection was the failure "to explicitly disclose what the indirect excitation means is".

It is strongly suggested that this objection arises from a failure of the language used to convey the distinction between a "direct" and "indirect" excitation. The specification clearly, plainly, and explicitly states: "The additional energy added to the fluid F may be provided by... inducing a low energy nuclear reaction (LENR) within the nozzle, using conduction and convection to heat the fluid F..." (Specification, p. 5, lines 16-19; the omitted first and final clauses of this sentence will be discussed below.) Excitation of the material of the nozzle will heat the fluid in the nozzle through inter-molecular collisions, i.e. heat transference by means of "conduction" or "convection". To the extent that individual molecules of the fluid permeate or directly contact the heat transference block they may be directly excited into a phase change; to the extent the energy of such phase changes affects other molecules of the fluid, they are indirectly excited. At the element-of-a-system level (that is, at the level where the claims are drafted), however, the excitation is of the nozzle.

This is distinguished from excitation means that induce LENR in the fluid flowing through the nozzle, i.e. beyond the boundary at the element-of-the-structure level of the claims language, or interior surface, of the nozzle. Intra-molecular permeation (of molecules of the fluid into the nozzle material), is not addressed at this level of detail.

Contrary to the assertion in the Response that the specification "requires experimentation to determine if the energy claimed to be transferred into the nozzle actually heats the nozzle (through LENR)", fundamental thermodynamics assures that energy transferred into the nozzle will heat the nozzle; no experimentation on this point is needed.

The crux of this objection is that the inventor "omits information essential to the utility and/or manufacture of the claimed invention" and most particularly, "an example of an

indirect excitation means, how the indirect excitation means functions to enable LENR, temperatures requirements, etc." (Response, p. 8, paragraph (F).)

The applicant is not and cannot be required to provide any explanation of "how the indirect excitation means functions to enable LENR" – not, that is, to any extent that the word "how" is read to mean requiring a theoretical explanation. Inventors never need to provide a theoretical explanation and are entitled to an invention even if their theoretical explanation is not just incomplete or missing, but even wrong.

In terms of implementation, the specification does provide adequate detail. For example, the Specification stated in the first and final clauses to the text cited above, which add just the specific detail which the applicant found to be critical, these specific extra details, "The additional energy added to the fluid F may be provided by electrical stimulation of a portion of the throat adding heat directly to the fluid F, inducing a low energy nuclear reaction (LENR) within the nozzle,...or any combination thereof." (Specification, p. 5, lines 19-20.)

Immediately after that, additional detail is added: "The phase change may be further supported by a surfactant in the fluid F that promotes and enhances the low energy nuclear reactions in the nozzle." (Specification, p. 5, lines 20-21.) Figures 7 and 8 give the pattern of the electrical stimulation, which was experimentally confirmed to be more important than the absolute values. Additional details can now be readily determined by reference to U.S. Patent 7,442,287 (e.g. "That stimulus is a time-varying voltage with a baseline near ground potential. It is shown in FIGS. 2 and 3 in a ramped and unramped form, respectively. Observations show that a 3.15 MHz pulse train modulated by a 50 MHz sine wave is effective.")

Applicant understands that the Office desires further "quantitative or qualitative data" and has provided the same in his accompanying Declaration, which is hereby incorporated in this Response in entirety.

The Response further objected in paragraph (H) to a lack of research "into the material science aspects of deuterated metal". That, however, presumes that a deuterium-based LENR process is involved. As the applicant's accompanying declaration explicitly states, that assumption is not necessary. It is improper to require that the applicant adhere to a theoretical explanation or model which his own effort has already shown to be flawed.

For all of the above reasons, Applicant respectfully asserts that this objection has been traversed and that sufficient proof of utility and operability is presently before the Office, thereby enabling this invention for those skilled in the art.

OBJECTION TO THE CLAIMS

The claims 4-10 were rejected under 35 U.S.C. §112 for reasons "the same as the reasons for the objection to the specification for lack of enablement". (Response, p. 9, § 11.) For the grounds advanced above, it is asserted that this objection has been traversed.

Claims 11-23 have been amended, in conformance with the original Specification, including all of the drawings thereof, and to comply with the imposed restriction. It should be noted that, to the extent that the Office objected to a lack of details concerning implementation in the claims, these details have been and are now disclosed in all of the claims, including those currently amended.

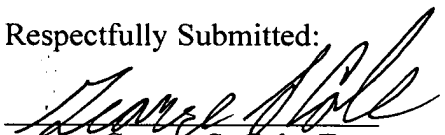
Accordingly, it is respectfully asserted that the objections are traversed and the claims, as amended, are now proper.

If the Examiner has any questions or wishes to discuss this matter he is urged to contact the Applicant's attorney, George S. Cole, Esq., using the phone, fax, or email below.

A claims listing with the status of each claim, with the claims in ascending order, and with the text of the claim, has been appended to this Response. This listing of claims will replace all prior versions, and listings, of claims in the application.

The Applicant believes that these claims are now all in presently allowable, correct, and proper form, and respectfully asks for a timely Notice of Allowance to be issued.

Respectfully Submitted:



George S. Cole, Esq.
PTO #40,563

495 Seaport Court, Suite 101
Redwood City, CA 94063
Tel: (650) 322-7760
Fax:(650) 322-6117
GSCdLawyer@aol.com